RECON™ Test Set

The first true 21st century telecommunication line analyzer.

User Manual

- Multilingual (English, French, Spanish)
- Rugged water and rainproof housing
- Angled bed-of-nails and Piercing clip cord set
- Large backlit LCD
- Glow in the dark keypad
- On-hook voltage and off-hook current readings
- Caller ID/Call Waiting Caller ID and error detection
- Last number called or received list
- Amplified line monitoring
- Soft key menu system
- Data Defender™ keeps digital lines safe
- Detects and identifies DSL and T1 lines
- DTMF Digit Capturing
- Displays Ring Frequency & Ring Voltage

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RECON™ Test Set

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ABOUT THIS MANUAL

The RECON Test Set™ is a self-contained, battery-powered, telephone test set for use by installers and repair technicians. Its state of the art design makes it rugged and water resistant. The RECON Test Set™ is ideal for temporary communication, servicing and installing telephone & data lines. It comes with a protective silicone™ boot as well as a deluxe cord set made from nylon cloth covered test lead wire. Also available is an optional carrying case that holds the test set.

Symbols & Icons

The following symbols are used throughout the manual or in the display screen of the RECON Test Set™ to help you avoid personal injury and potential damage to the test equipment (Table 1).

Table 1. Symbols and Icons

Symbol	Definition
	Warning: Potential for personal injury Caution: Potential for damage to or destruction of equipment
	Conformité Européenne: Conforms with European Economic Area directives
	Disposal information: Do not place equipment and/or its accessories in the trash. Items must be properly disposed of in accordance with local regulations

Terms and Descriptions

Table 2 defines the terms used throughout the manual and provides information to assist you with proper operation and understanding of the unit and its functions.

Table 2. Terms and Descriptions

Terms	Description and Uses
Talk Mode	In this mode, the RECON Test Set™ goes "off hook" and produces a dial tone when connected to a POTS line. While off-hook, the RECON Test Set™ can dial phone numbers from its keypad or via internal memory slots.
Bell Mode	This is the "on hook" or "off" mode. In this mode, caller ID and the Ringer are activated when a call is being received.
Monitor Mode	Monitor mode allows listening to a line without loading it. It displays line voltage, on-hook Caller ID and any detected DTMF digits on the line.
POTS line	"Plain Old Telephone Service" the basic form of wired residential and small business service connection.
Hook flash	Rapid depression and release of the switch hook which is used for placing a call on hold, notifying an operator of the completion of a call, or signaling a PBX.
DTMF	Dual Tone Multi-Frequency is the signaling between the subscriber and switching equipment from push button telephones.
Tone	Tone dialing mode uses the DTMF method to signal the switching equipment for each numbered button press.
Pulse	Pulse dialing mode signals the central office or switch by opening and closing the telephone loop a specific amount of times depending on the number dialed.
CID and CWCID	Caller ID is 1200 BAUD modem data sent between the first and second ring with information about the incoming call for display on a phone that recognizes CID. Call Waiting Caller ID is the same information sent to the phone while a call is in progress preceded by a call waiting tone.
Tip and Ring	Tip and Ring are the historical names for the two leads of a POTS line. Tip is the black lead and Ring the red lead of the cord set. Contrary to modern standards, the black lead is a positive voltage with respect to the red lead.

Safety Information

To ensure safe operation of the RECON Test Set™, follow the instructions carefully and observe the warning and caution messages listed in Table 3. Failure to observe warnings can result in damage to the unit.

Table 3. Safety Information

Notification	Definition
xxV TOO HIGH DISCONNECT NOW!	High Voltage detection appears when the voltage on the cable is unsafe and exceeds 65 volts peak AC or DC.

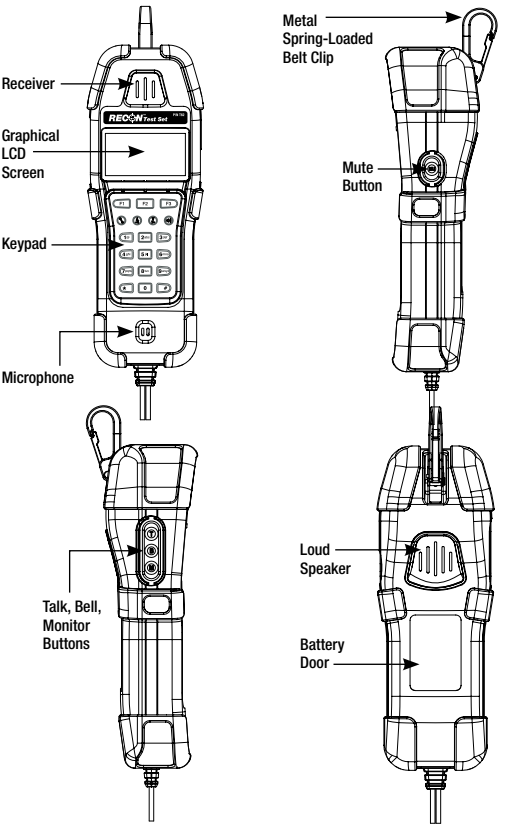
DESIGN FEATURES

- Largest backlit LCD display on the market
- Ergonomically designed body for comfortable use
- Rainproof and highly water/dust resistant case to IP54 standard
- Drop tested up to 20 ft
- 60 inch Angled Bed-of-Nails with Piercing pin cord set
- Glow-in-the-dark keypad
- Metal spring-loaded belt clip
- Loud speaker with fine volume adjustment
- Adjustable earpiece volume, hearing aid compatible
- Microphone mute with toggle on/off locking feature
- Soft key menu system simplifies user interface and customization
- Contact list of up to 8 names and phone numbers
- Supports three languages: English, Spanish and French
- Measures and displays ring frequency and voltage
- Supports both CID and CWCID
- Cushion boot for extra protection in ultra-harsh environments
- Data Defender™ detects lines with data – DSL, T1, etc. (Data Defender is a trademark of Independent Technologies)
- High line voltage protection with override options
- Active monitor circuitry minimizes load on subscriber line
- DigitView™, DTMF digit detection and display in Monitor mode, diagnose premise equipment
- PwrSave™ circuitry for Extra Long battery life

RECON Test Set™ Description

The RECON Test Set™ is illustrated in Figure 1.

Figure 1. RECON Test Set™



Angled Bed-of-Nails with Piercing Clip Cord Set

One angled bed-of-nails with piercing pin cord set is located at the bottom of the RECON Test Set™. The connectors enable you to securely connect with individual telephone cable connectors.

Figure 2. Angled Bed-of-Nails with Piercing Clip Cord Set

LCD Display Screen Descriptions

The RECON Test Set™ has a transflective graphical LCD display screen, shown in Figure 3 below. The LCD display screen shows the following: modes and related icons, memory and battery life indicator.

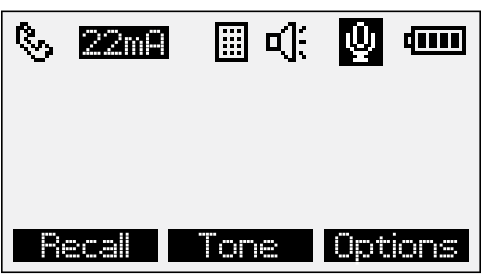


Figure 3. LCD Display Screen

Talk Mode

When the Talk button is pressed, the RECON Test Set™ goes off hook and displays the line condition on the LCD display screen. The following information is displayed on the screen when RECON Test Set™ goes off hook:

- **mA** - The loop current measured on the line, normal polarity 22mA and reverse 22mA polarity
- **Telephone Icon** - Indicates that the RECON Test Set™ is operating in Talk Mode
- **Tone/Pulse Icon** - Displays whether the RECON Test Set™ is in DTMF tone or pulse dial mode
- **Speaker Icon** - Appears when the loudspeaker is active
- **Microphone Icon** - Indicates if the microphone is muted or unmuted
- **Battery Icon** - Displays remaining battery life. A new set of batteries has four bars
- **Recall Soft Key** - Press F1 to go to the Speed Dial screen.
- **Tone Soft Key** - Press F2 to toggle between tone and pulse dialing.
- **Option Soft Key** - Press F3 to activate a popup menu for dialing A-D and Pause.

Memory Storage

While in the Setup menu, numbers 1-8 will be displayed representing the 8 name and number memory locations. By selecting a memory location number you will be able to edit or erase an entry. See Table 5 for a description of the display screen updates when Memory Storage is in use.

Table 4. Memory Storage

Values	Description
12345678	The unit has eight memory storage locations. The slot number is reverse video if in use.
Memory Dial	Each memory slot has the option to view or enter a name and number.
Memory Name	Up to 16 characters can be entered to identify the number stored in that location.
Memory Number	Up to 32 digits can be saved in each of the 8 memory locations.

Note: *Refer to the* ***Using Memory Storage*** *section on page 17 to learn how to store multiple number values for testing purposes.*

Battery Life Indicator ( )

The battery life icon appears in the upper right corner of the LCD display screen to demonstrate the approximate remaining battery life. A new set of batteries shows four bars. The number of bars decreases as the battery is nearing depletion. At about 4.2 volts the battery icon has no bars. At about 3.5 volts the screen starts to fade. Results may be unreliable at this point.

Note: *The RECON Test Set™ will turn off if the power supply goes out of regulation from a low battery condition.*

Detection Warnings

When entering Talk mode the RECON Test Set™ performs several tests before going off-hook. These tests include high and low voltage checks and data detection. The following describes the types of warning screens that might be encountered.

Figure 4.1 - The voltage warning display screen is presented if the voltage detected on a cable exceeds 65 volts peak AC or DC. If this screen appears, the RECON Test Set™ disconnects from the line and retries every few seconds. The RECON Test Set™ should be disconnected immediately from the source of voltage to prevent damage.

Figure 4.2 - The high current warning is displayed if the current on the line exceeds 125mA. If this screen appears, the RECON Test Set™ should be disconnected immediately from the source of the current.

Figure 4.3 - If a line is in use, the RECON Test Set™ will display the line in use screen. To connect, press the F2 soft key.

Figure 4.4 - If data is found, the Data Present warning is displayed with the measured KHz.

Figure 4. Detection Warning Screens

Figure 4.1 Over Voltage Warning

Figure 4.2 Over Current Detection Warning

Figure 4.3 Line In Use Warning

Figure 4.4 Data Present Warning

Note: *The RECON Test Set™ continually checks for the presence of voltage on a connected cable.*

Keypad

The RECON Test Set™ is equipped with a glow in the dark keypad. There are seven control buttons illustrated in Figure 5. Three buttons, appearing on the top row of the keypad, are used with the corresponding menu option displayed on the LCD screen. A Setup button will access the setup menu in Monitor or Talk modes. The Up/Left, Down/Right buttons are used to scroll through menu options or adjust the volume. The speaker button activates the RECON Test Set's™ loudspeaker. The twelve digit telephone keypad is used to dial a number or send DTMF tones. The button functions are explained in Table 5.

Figure 5. Keypad and Control Buttons

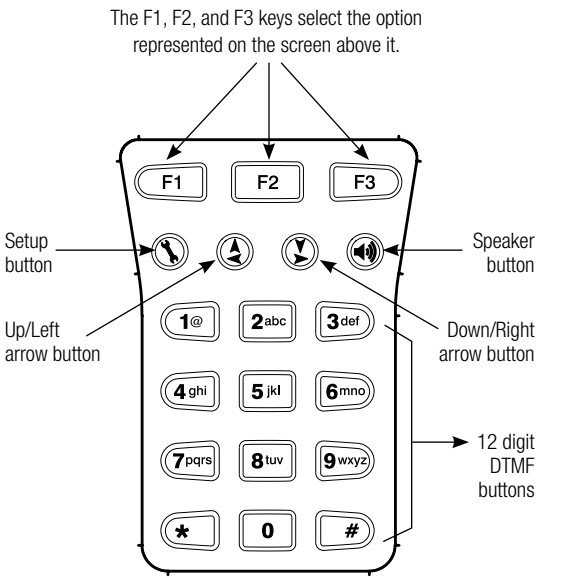
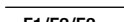


Table 5. Keypad

Button	Function
Talk	• The Talk button is used to power on the RECON Test Set™ and goes "Off Hook" if appropriate line voltage is detected. • While in talk mode, the Talk button can be pressed to "Flash" the line. • The Setup menu is accessible in Talk mode.
Bell	• Pressing the Bell mode button will power off the RECON Test Set™. • Goes "on-hook" if RECON Test Set™ was in Talk mode. • Bell mode is used for caller ID and the incoming call ringer.
Monitor	• Monitor mode is used to listen for line condition and measure line voltages. • DTMF digits are captured and displayed. • The setup menu is accessible in Monitor mode.
F1/F2/F3 	• F1, F2, and F3 correspond to the options displayed on the LCD screen directly above them.
Up/Left Down/Right Arrows	• In Talk and Monitor mode, these buttons are used to adjust the volume. • In the Setup mode, these buttons are used to scroll though options, delete an entry, or add a space.
Speaker	• The Speaker button activates the loudspeaker on the back of the RECON Test Set™ and mutes the microphone. • Hold the Speaker button down for 2 seconds to toggle the backlight on/off.
Mute	• The Mute button silences the microphone while in Talk mode. • When the loudspeaker is on, the mute button will mute the loudspeaker and activate the microphone, a push to talk function. • In Monitor mode, hold the Mute button down to mute the loudspeaker.
Setup	• The Setup button will display the setup menu in Monitor or Talk mode.

OPERATIONS

To ensure safe operation of the RECON Test Set™, follow the instructions carefully and pay attention to the warning and caution symbols. Failure to observe warnings can result in severe injury or death and can damage the unit.

Turning the Unit On/Off

Turn Unit On

- Press the Talk or Monitor mode buttons on the side of the RECON Test Set™. The RECON Test Set™ immediately measures voltage (monitor mode) or current (talk mode) when powered ON.

Turn Unit Off

- Press the Bell mode button to power off the RECON Test Set™. The "T3 Innovation" screen will be displayed for 10 seconds before unit is fully powered off.

Automatic Power Down

The RECON Test Set™ has automatic power-off for all modes to conserve the battery. The default power-off time is set for 20 minutes of no activity. To change the automatic power-off, refer to page 18 in the Setup Mode portion of the instruction manual. To "wake up" the test set when RECON Test Set™ has timed out and powered OFF, press the TALK or MON button.

POTS Testing General Guidelines

The RECON Test Set™ is intended for temporary connection for servicing phone lines.

Connecting to a POTS line

The angled bed of nails with piercing pin cord set attached to the RECON Test Set™ must be used to properly connect to telephone lines. Connect to Tip and Ring on a 66 block, 110 block, or modular adaptor (banjo). Because typical phone line voltage is negative, the red lead is connected to Ring (negative), and the black lead is connected to positive ground (Tip).

Important Points to Note

The angled bed of nails with piercing clip cord set attached to the RECON Test Set™ must be used to properly connect to telephone lines.

- For 66/110 blocks, affix the angled bed-of-nails with piercing pin cord set to tip and ring.
- When testing from an RJ11, use an appropriate modular adaptor (banjo).

Important Safety Points to Note

xx Volts, DISCONNECT NOW! message appears when the voltage surpasses 65 volts peak AC or DC. It is not recommended to operate the RECON Test Set™ on cable systems exceeding a voltage value of 65 volts or current in excess of 125 mA.

Internal components of the RECON Test Set™ are protected to 270 volts peak AC or DC and a voltage clamp will activate. Connecting the unit to cabling systems with voltage above 270 volts peak AC or DC may damage the test unit and pose a safety hazard for the user.

The T/B/M (TALK/BELL/MON)

T/B/M buttons are on the left side of the RECON Test Set™. The following subsections describe how the RECON Test Set™ works in each of the three settings.

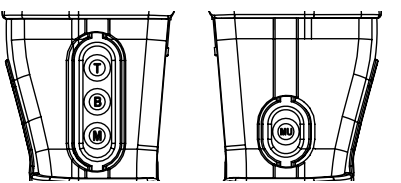


Figure 6.
Using the TALK/BELL/MON and mute Buttons.

The TALK Setting (TALK Mode)

The "TALK" or off-hook position takes the RECON Test Set™ "off hook" on a standard "POTS" (plain old telephone service) voice phone line. While the RECON Test Set™ is off-hook, it can dial numbers either directly from the keypad or from its memory dial slots (see page 17, figures 9-4).

Off-Hook Protection

The RECON Test Set™ checks for low voltage, high voltage, and presence of data before going off-hook. Once off-hook, the RECON Test Set™ checks for excess loop current.

- The RECON Test Set™ must measure 18 volts or more on the line it is connected to (a voltage level indicating a live but not in use line) before it will go off hook. If the RECON Test Set™ doesn't go off hook, it displays "Off-Hook Protection", the voltage measured for the line, and an option to "Connect" on its LCD screen. To connect, press the F2 button under "Connect" to go off hook despite this voltage reading and attempt to operate normally (Because the RECON Test Set™ internal voice circuits are line powered, it won't work if there's insufficient power on the line).
- The RECON Test Set™ also checks for line voltage exceeding 65 volts. If it finds the line voltage exceeds this level, it doesn't go off-hook but displays the messages: "xxV,TOO HIGH!" and "DISCONNECT NOW!!" (see page 9 figure 4.1). It continues to monitor the line voltage for about five minutes, then powers down if the high voltage has not been removed. The RECON Test Set™ will automatically go off-hook if the voltage goes below the 65 volt threshold. The line current will be displayed on the top line of the LCD. The RECON Test Set™ detects the polarity of the connection and will reverse-video the line current to indicate a reverse connection.
- In addition to the voltage checks when going off-hook, the RECON Test Set™ uses patented Data Defender™ technology to check for data being present on the line. If data is detected, "Off-Hook Protection", "Signal: xxx KHz" and "Active Data Found" are displayed. The average signal frequency of the largest amplitude data energy is displayed. An override soft key option, "Connect", is displayed and by pressing F2 the RECON Test Set™ will go

off-hook. The override feature may be needed should high frequency energy be present on a circuit due to stray coupling. The Data Defender™ circuitry is active in monitor mode and will display signal frequency and "Active Data Found" if data is present. Data Defender™ is a trademark of Independent Technologies, Patent number 6,556,661.

DSL Detection

The RECON Test Set's™ average frequency reading will be either in the range of 70 to 90 KHz at the premise (upstream) end of an active DSL link or 260 to 280 KHz at the DSLAM (downstream) end due to the pilot tones.

T1 Detection

The RECON Test Set™ average frequency reading will read the carrier frequency between 700 and 800 KHz on a T1 line.

CWCID

In Talk mode the RECON Test Set™ supports Call Waiting Caller ID (CWCID or Type 2 Caller ID). When a call is already in progress, an incoming call's ID is displayed on the screen. During this the label "CWCID" replaces the line current field. The user can switch to the incoming call by pressing the Talk button to "Flash" the line.

Speed Dial

In Talk mode, function key F1 ("Recall") accesses a screen for speed dialing. From the Speed Dial screen, press the zero (0) key to dial the last number dialed or a Memory Dial slot by pressing 1 through 8. The soft function keys provide further access to the Memory Dial slots or Recent Call List by pressing the soft key and scrolling through the slots using the arrow keys. Press the Dial soft key to dial the currently displayed number.

Flash

To flash the phone line, press the "T" (Talk) button while off hook. The Flash function breaks the phone line connection for 0.6 seconds, simulating a phone "hookflash" signal. Hookflashes are often used to transfer calls or to activate special PABX or central-office features.

Volume Control

Use the ▲ and ▼ keys to adjust receiver and loudspeaker volume. During adjustment a bar graph is displayed to show the volume percentage. The receiver and loudspeaker have separate volume settings. Volume levels for Talk mode and Monitor mode are set and stored independently.

Using the Multi-function Mute Button

When the test set is off hook in the TALK mode and the loudspeaker is OFF, you can mute the RECON Test Set™ microphone by pressing down the mute button on the right-hand side of the RECON Test Set™ (see Page 13, figure 6). If you tap the button for less than 2 seconds, the mute lock feature is enabled and the microphone icon is in reverse video. The test set will remain muted until you press the button again. If you hold this button down for more than 2 seconds, the mike will be muted only while the button is held down; as soon as you let go, it will resume operating normally.

When the test set is off hook in the TALK mode with the loudspeaker ON, the microphone is automatically muted to prevent feedback. The mute button is used to turn the loudspeaker OFF and the microphone ON so that you can talk to the remote party over the phone line. The microphone is only ON while the mute button is being held down. Under these conditions, when the mute button is pressed, the speaker icon is displayed in reverse video and the microphone icon is displayed normally.

When the test set is in the Monitor mode with the loudspeaker ON, the mute button is used to mute the loudspeaker. The loudspeaker is only OFF while the mute button is being held down in a push to talk like operation. While muted, the speaker icon on the screen is displayed in reverse video.

The BELL Setting (BELL Mode)

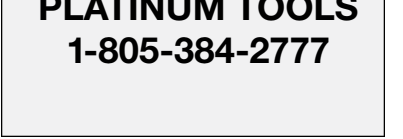
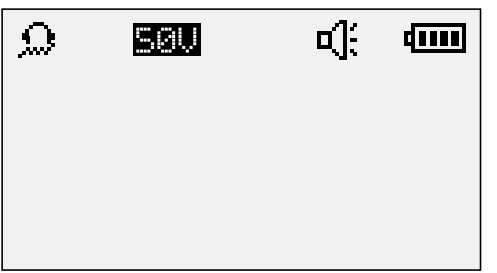


Table 7.
Caller ID Screen

The BELL mode is the “off state” of the RECON Test Set™. The keypad is disabled and the RECON Test Set™ is in its lowest power state. The test set monitors the phone line to which it is connected for ringing and Caller ID signals. If it detects an incoming ring, it sounds the electronic ringer. If the RECON Test Set™ detects incoming Caller ID information, it will test the signal for correct format, checksum, and display the frequency and RMS voltage of the ring signal at the top of the screen. In Bell Mode, if the RECON Test Set™ is not taken off hook while it is ringing, it will power OFF again about 10 seconds after the end of ringing.

The MON Setting (MONITOR Mode)

Figure 8. Monitor mode Screen



The MON position (MONITOR mode) causes the RECON Test Set™ to use its high impedance amplifier so that you can listen to a line without loading it. On-hook Caller ID is also received, checked and displayed in this mode. The line voltage is measured and displayed, with reverse polarity indicated by a reverse video icon. The RECON Test Set™ also monitors the line it is connected to for DTMF signals. If it detects any of the 16 valid DTMF signals it will display the characters on the LCD.

- Headset Icon - Indicates that the RECON Test Set™ is in Monitor Mode
- xxV - The voltage measured on the line, normal and reverse polarity
- Speaker Icon - Appears when the loudspeaker on the back is active
- Battery Icon - Displays remaining battery life. A new set of batteries has four bars

When the test set is in the Monitor mode with the loudspeaker ON, the mute button is used to mute the loudspeaker. The loudspeaker is only OFF while the mute button is being held down. While muted, the speaker icon on the screen is displayed in reverse video.

Volume Control

Use the ▲ and ▼ keys to adjust receiver and loudspeaker volume. During adjustment a bar graph is displayed to show the volume percentage. Volume levels for Talk mode and Monitor mode are set and stored independently.

Setup Menu

To enter the Setup Menu, the phone must be in talk or monitor mode (not Off Hook Protection mode). By pressing the Setup key, the RECON Test Set™ will present a list of options that can be modified. The RECON Test Set™ command keys now take on their setup-mode functions/identities. You can use the ▲ or ▼ scroll keys to move to different items. Pressing the Setup key will exit the setup menu.

Setup mode automatically exits after 2 minutes without a key press.

Memory Dial - The Memory Dial entry displays the eight memory dial records that are available (see figure 9). The digits in reverse video identify slots that are not empty. Press a numeric key to jump immediately to that slot. Alternately, press function key F3 to access slot #1 of the Memory Dial list.

In the Memory Dial list, use the arrow keys to move up and down between entries. Function key F3 opens the entry for editing and function key F1 deletes (clears) an entry (see figure 9.2). When in Talk mode, function key F2 (Call) dials the currently displayed number.

When editing a Memory Dial slot, you enter the name first (see figure 9.3). Up to 16 characters can be used to identify a record. Enter characters by pressing a numeric key to cycle through its associated letters. Both uppercase and lowercase letters are available via the scrolling mechanism. Pressing the left arrow key deletes to the left, pressing the right arrow key moves to the right, adding a space. The Clear function key (F2) deletes the entire entry. Use the other function keys to cancel (F1) or save (F3) the edited results. If you do not want to change the existing name, just press F3 to proceed to number entry.

Figure 9. Memory Dial

Figure 9.1 Setup Menu Screen

Figure 9.2 Memory Dial Name and Number

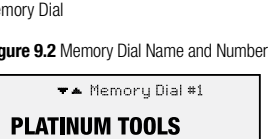
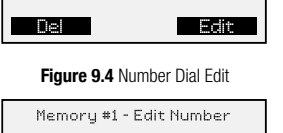


Figure 9.3 Memory Dial Edit

Figure 9.4 Number Dial Edit



Once you save the slot's name, you then enter the associated phone number. On the Edit Number screen you use the function keys to cancel (F1), save (F2) or access other options (F3). The Options key activates a popup menu that contains additional operations. Press F3 again to view the second page of the popup menu. Each item on the popup menu is activated by pressing the key shown to its left. The popup menu allows you to enter additional DTMF numbers (A-D), add a pause to the dialing sequence, change to tone dialing and clear (erase) the phone number.

Enter a phone number with the RECON Test Set's™ keypad. As the number is entered it is formatted according to the Number Format defined below (e.g. 123-4567). Use the left arrow key to delete to the left..

Recent Call List - The RECON Test Set™ automatically stores the last 10 numbers called or received. To view the list, press F3 (View) while Recent Call is displayed in Setup. Scroll through the list of recent calls with the and keys. Press the Setup key to exit. Use function key F1 (Del) to delete an entry from the list and function key F3 (Save) to save an entry in the Memory Dial list.

Language - Use function keys F1 and F3 to switch between English, French and Spanish.

Number Format - This entry defines how telephone numbers are displayed. Use function key F3 to edit the numeric formatting. When editing, use the pound key (#) to enter a digit placeholder and the one key (1) to scroll through a short list of symbols (minus, plus, parenthesis, period, forward slash). The zero key (0) enters a space. The and scroll keys delete left or move right during editing. Use the function keys to Cancel, Clear or Save the edited format.

Ring Volume - The Ring volume can be adjusted by pressing F1 (decrease) and F3 (increase). The RECON Test Set™ will sound an audible ring relative to the volume setting. To repeat the ring, you can press F2 (Ring).

Display Contrast -The display contrast can be adjusted from 40% to 70% using the F1 button (decrease) and F3 (increase). The contrast immediately adjusts to the specified level.

Backlight Level - The backlight can be adjusted from 0% to 100% using the F1 button (decrease) and F3 (increase). The backlight immediately adjusts to the specified level. Note that higher backlight levels drain the battery more quickly. The backlight is turned on and off at any time by pressing and holding the speaker key for 2 seconds.

Auto Power off - The auto power off can be adjusted from 10 minutes up to 60 minutes or off (Never) using the F1 button (decrease) and F3 (increase and off). This controls how long the phone remains in Talk or Monitor mode, with no activity, before returning to Bell mode.

Maintenance

Battery Replacement

Disconnect RECON Test Set™ test leads prior to opening battery door to avoid electrical shock and personal injury.

1. Carefully remove silicone™ boot from RECON Test Set™.

   Watch Video *How to Remove Boot from Phone www.platinumtools.com/recon/remove-boot*

2. Remove all 4 screws on the battery door, located in the back of the RECON Test Set™ towards the bottom of the unit, with a #1 Philips head screwdriver.
3. Take off the battery door and remove old batteries.
4. Replace with four AAA Alkaline batteries. Slide batteries into the battery cartridge according to the diagram imprinted on the bottom of the battery compartment.
5. Return the battery door to the unit and tighten the screw to secure the battery door. The door is keyed to fit in only one direction.
6. Carefully replace silicone™ boot on RECON Test Set™.

Disconnect RECON Test Set™ test leads prior to opening battery door to avoid electrical shock and personal injury.

Cleaning

Use a damp, clean cloth to clean the tester.

Disconnect the RECON Test Set™ test leads prior to cleaning. Failing to do so can damage the unit and result in personal injury.

Do not use abrasive harsh cleaners, or solvents to clean the RECON Test Set™.

Storage

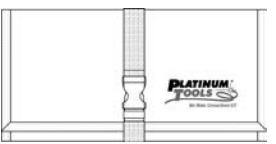
When the RECON Test Set™ is not in use, store in a dry, protective case. The batteries should be removed if the unit is stored for a long period of time.

Do not expose the RECON Test Set™ to high temperatures or humidity. When stored in temperatures exceeding the limits listed in the Specifications section, allow the RECON Test Set™ to return to the normal, recommended operating conditions prior to use.

Additional Accessories

The list of accessories below (see Table 6) will assist you with operating the RECON Test Set™. These items are available for purchase through Platinum Tools authorized distributors.

Table 6. Additional Accessories

Accessory	Product #	Description
	4007	Hanging Pouch

CUSTOMER SERVICE

Contacting Platinum Tools:

For technical information and customer support, please visit **www.platinumtools.com** or send an email to **support@platinumtools.com**

Contact Numbers:

Phone: 805-384-2777
Fax: 805-384-2778

Address:

806 Calle Plano
Camarillo, CA 93012

Warranty Information

Platinum Tools guarantees that its products will be free of all defects in material and workmanship. This warranty extends for a period of 18 months for the Platinum Tools test equipment from the date of manufacture or proof-of-purchase.

All products deemed defective under this warranty will be repaired or replaced at Platinum Tools' discretion. No further warranties either implied or expressed will apply, nor will responsibility for operation of this device be assumed by Platinum Tools.

Product Registration

Registration of your purchased equipment and accessories allows you to access support information, receive notifications of product updates, and to validate your warranty. Please visit the Platinum Tools website at www.platinumtools.com/warranty to register products.

Disposal

WEEE Compliant: Prior to disposal of this product, please contact Platinum Tools for proper disposal options.

Returns

Prior to returning any product to Platinum Tools, you must first request a Return Merchandise Authorization Number by contacting the Customer Service Department at 805-384-2777.

Note: *Shipments will not be accepted without this number, which must be clearly marked on the shipping label.*

1. Prior to packing, include a copy of the sales receipt if available.
2. Provide a description of the operational problem with the product(s) being returned.
3. Include a contact name, phone number, and e-mail address.
4. Pack items securely to prevent damage during shipping.
5. Ship prepaid to: Platinum Tools 806 Calle Plano
   Camarillo, CA 93012

SPECIFICATIONS

Physical Dimensions (Without belt clip and cord set)	Size: 21 x 6.4 x 5.1 cm (8.25 x 2.5 x 2.0 inches)
Weight (With battery, cord set and belt clip)	559.7 grams (19.74 oz.)
Input Protection	Input Protection To 270 volts peak AC or DC
Battery Low Level	Approximately 4 volts
Power	4 x AAA alkaline batteries Operation: 7 hours min. 150 hours max. Standby: 2 years Active: approximately 43 hours Note: The loudspeaker and backlight draw a large amount of power and can discharge the battery quickly if used at high volume with the backlight at 100% on a line with high audio.
Operating Environment	Operating temperature: 0 to 50°C (32 to 122°F) Storage temperature: -20 to 60°C (-4 to 140°F) Humidity: 10% to 90%, non-condensing Altitude: 3,050 meters (10,000ft) maximum IP54 Dust and water resistant Passed drop test at 20ft
Interface	Attached cord set
Languages	English, Spanish and French
Ringer Equivalence	In BELL mode: 0.0 (no ringer load)
Pulse Dialing	Pulse rate: 10 pps ± 10%; Make/break ratio: 60% to 40% ±2%; USA Interdigit interval: 820 ms; Resistance during break: 120K Ohms minimum
Tone Dialing	DTMF output (into 600 Ohms): Tone-frequency error: ±1.5%; Tone Level: High group: -6 ±2 dBm; Low group: -8 ±2 dBm; High group vs. Low group Difference (twist): 2 ±1 dBm

SPECIFICATIONS

Flash Duration	600 ±50 ms
Pause Duration	Tone: 3 seconds; Pulse: 3.4 seconds
Memory	8 programmable locations, 32 digits with 16 character tag, stored in non-volatile memory Last number redial plus list of last 10 numbers dialed or received
Return Loss	Minimum 14 dB at 600 Ohms
Line-Current Range	10 to 110 mA
Apparent Line Resistance	275 Ohms at 20 mA
Compliance	CE Complies with Conformité Européenne directives.